

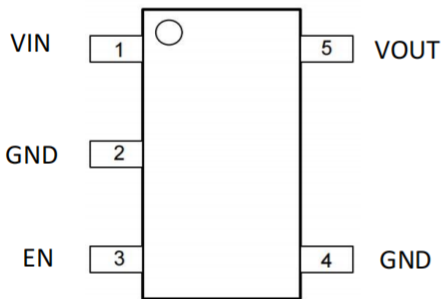
**Features**

- 0.5  $\mu$ A Current at no Load
- $\pm 2\%$  Output Accuracy
- 150mA Output Current
- Current Limit Protection

**Applications**

- Industrial Controls
- Home Automation
- Low Power Microcontrollers
- Wireless Handsets and Smart Phones

**PIN CONFIGURATION**

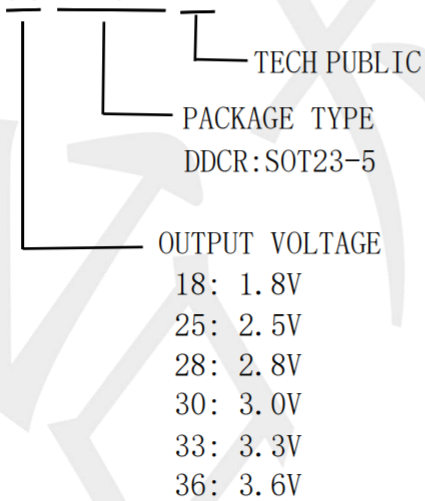


**SOT23-5**

Pin Number	Pin Name	Pin Function
SOT23-5		
1	VIN	Input of Supply Voltage
2	GND	Ground
3	EN	Enable Control Input
4	GND	Ground
5	VOUT	Output of the Regulator

**Ordering Information**

**TPS78233DDCR-TP**



### Absolute Maximum Ratings

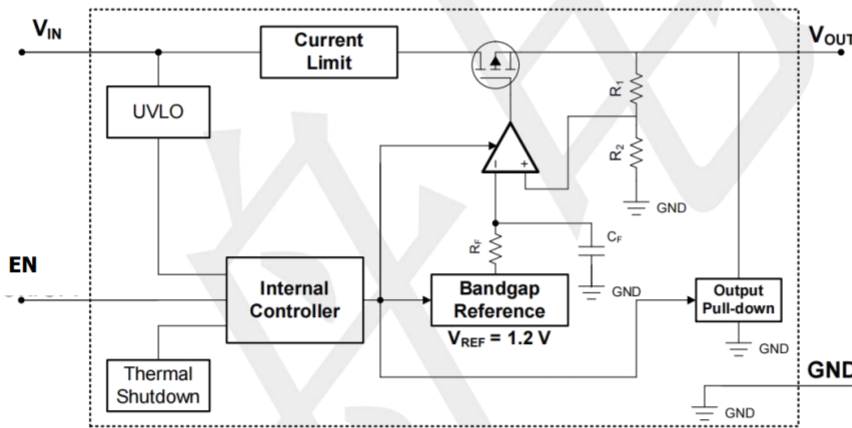
over operating free-air temperature range (unless otherwise noted)

		MIN	MAX	UNIT
V <sub>IN</sub>	Continuous input voltage range	-0.3	6	V
V <sub>OUT</sub>	Output voltage range	-0.3	V <sub>IN</sub> +0.3V	
EN	EN pin voltage range	-0.3	V <sub>IN</sub> +0.3V	
Current	Maximum output current	--	150	mA
Temperature	Operating junction, T <sub>J</sub>	-40	125	°C
	Storage, T <sub>stg</sub>	-55	150	

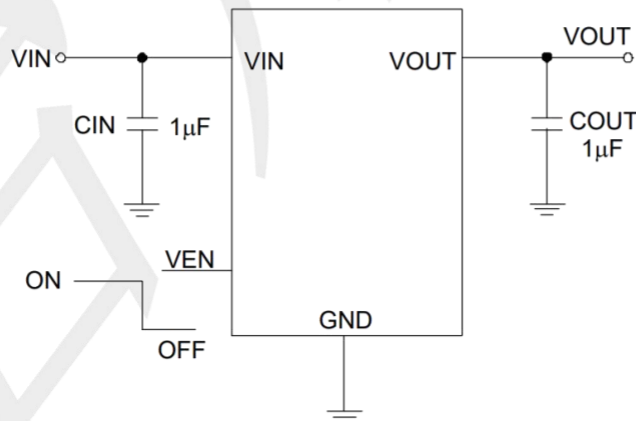
### ESD Ratings

			VALUE	UNIT
V (ESD)	Electrostatic discharge	Human body model (HBM)	±2000	V
		Charged device model (CDM)	±500	

### BLOCK DIAGRAM



### Typical Application Circuit



**Electrical Characteristics**

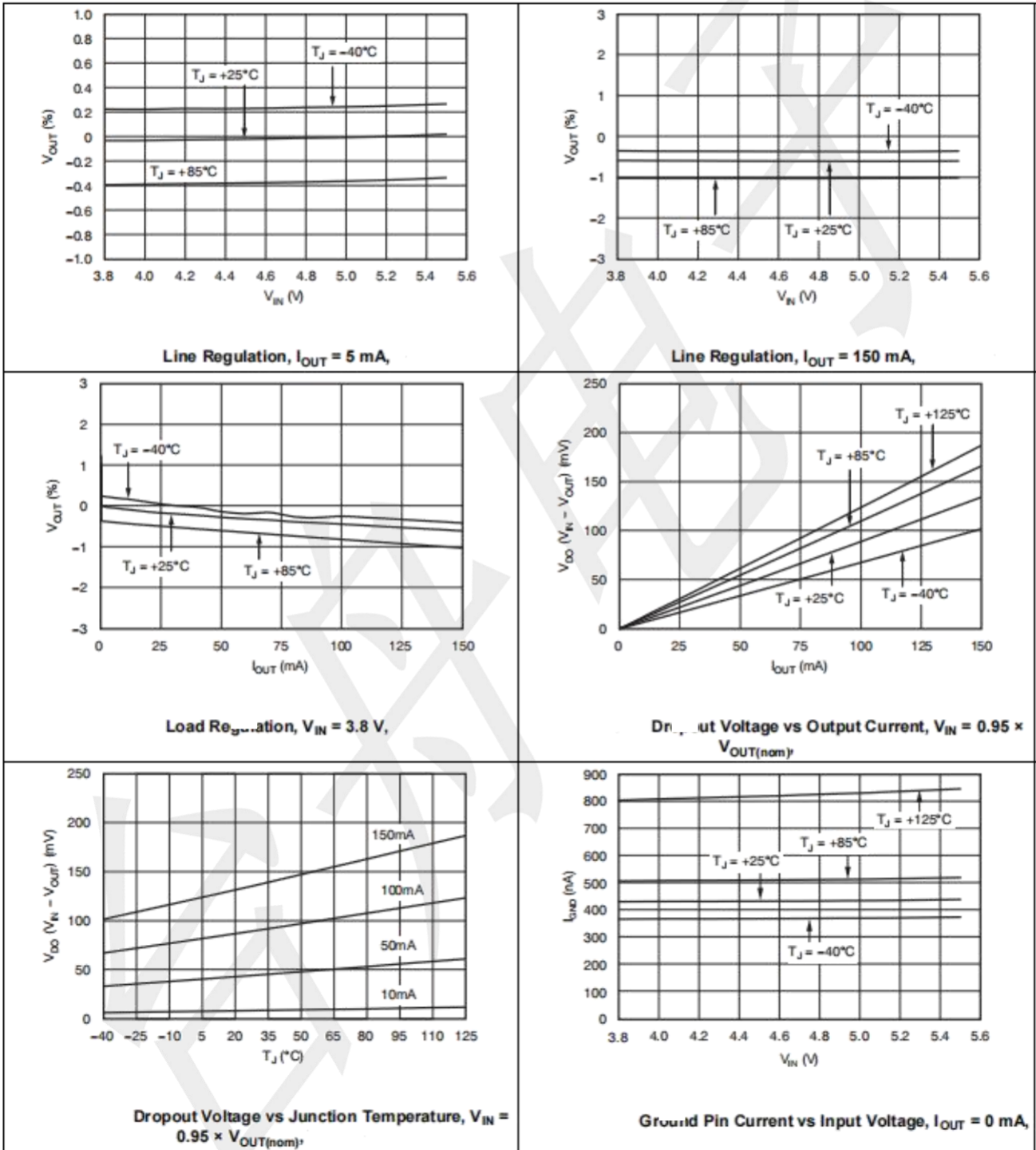
(VIN=5V, VEN=3.3V, TA=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST Conditions	MIN	TYP	MAX	UNIT
Supply Voltage	VIN		2.2	--	5.5	V
DC Output Voltage Accuracy		IOUT = 0.1mA	-2	--	2	%
Dropout Voltage (VIN-VOUT)	IOUT = 100mA	VOUT = 1.8V	--	160	--	mV
		VOUT = 2.3V	--	150	--	
		VOUT = 2.5V	--	145	--	
		VOUT = 2.7V	--	140	--	
		VOUT = 2.8V	--	138	--	
		VOUT = 3.0V	--	135	--	
		VOUT = 3.3V	--	130	--	
		VOUT = 3.6V	--	125	--	
Ground Current (IOUT = 0mA)	IQ	VOUT = 3.3V	--	0.5	1	uA
Shutdown Ground Current	ISD	VEN = 0V,	--	0.01	0.5	
VOUT Shutdown Leakage Current	I <sub>LEAK</sub>	VOUT = 0V	--	0.01	0.5	
Enable Threshold Voltage	VIH	EN Rising	0.6	--	--	V
	VIL	EN Falling	--	--	0.2	
EN Input Current	IEN	VEN = 5V	--	10	100	nA
Line Regulation	ΔLINE	IOUT = 1mA, 3 ≤ VIN ≤ 5V	--	1	--	%
Load Regulation	ΔLOAD	1mA ≤ IOUT ≤ 150mA	--	1	--	
Output Current Limit	ILIM	VOUT = 0V	150	400	500	mA
Power Supply Rejection Ratio	PSRR	VOUT = 3.3V, IOUT = 30mA, VIN = 5V, f = 1kHz	--	60	--	dB
Thermal Shutdown Temperature	TSD	IOUT = 10mA	--	150	--	°C
Thermal Shutdown Hysteresis	TSDHY		--	20	--	
Package Thermal Resistance (Note 1)	TJA	Thermal Resistance Junction-toAmbient	--	200	--	°C/W

Note: 1. Test condition: For SOT23-5, the device is mounted on FR-4 substrate PC board, with minimum recommended pad layout.

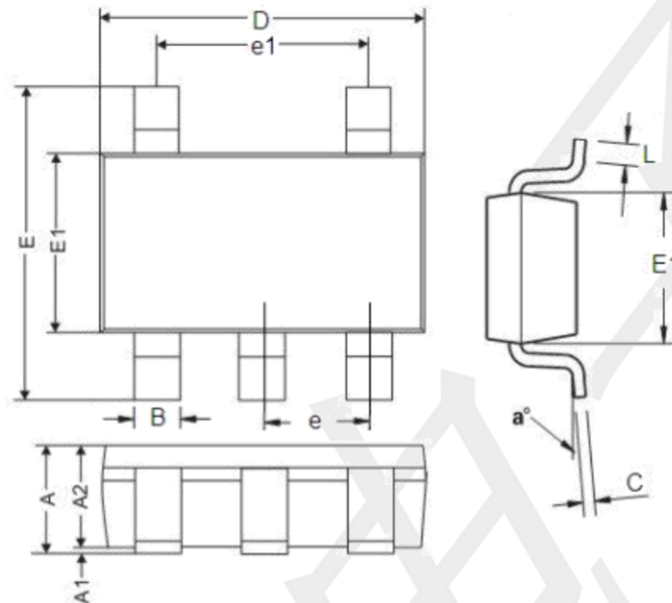
### Typical Operating Characteristics (25 °C, unless otherwise noted)

Unless otherwise specified:  $T_A = 25^\circ\text{C}$ ,  $V_{IN} = V_O(\text{NOM}) + 1\text{ V}$ ,  $C_{OUT} = 1\ \mu\text{F}$ ,  $C_{IN} = 1\ \mu\text{F}$  all voltage options, EN pin tied to  $V_{IN}$ .



**Package informantion**

SOT23-5



参数	尺寸 (mm)		尺寸 (Inch)	
	最小值	最大值	最小值	最大值
A	0.9	1.45	0.0354	0.0570
A1	0	0.15	0	0.0059
A2	0.9	1.3	0.0354	0.0511
B	0.2	0.5	0.0078	0.0196
C	0.09	0.26	0.0035	0.0102
D	2.7	3.10	0.1062	0.1220
E	2.2	3.2	0.0866	0.1181
E1	1.30	1.80	0.0511	0.0708
e	0.95REF		0.0374REF	
e1	1.90REF		0.0748REF	
L	0.10	0.60	0.0039	0.0236
a°	0°	30°	0°	30°

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